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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,742	01/17/2006	Daisuke Endo	G12-197996C/KK	1838

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EXAMINER	
MARKS, JACOB B	
ART UNIT	PAPER NUMBER
4111	
MAIL DATE	DELIVERY MODE
02/18/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,742	ENDO ET AL.	
	Examiner	Art Unit	
	JACOB MARKS	4111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *6-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5; 13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7-23-08; 11-02-07; 1-17-06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 6-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on January 15, 2009.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Masashi (JP 10-236826).

Regarding claim 1, Masashi discloses a rechargeable Lithium ion battery. Lithium ion battery's are inherently comprised of base particles that are able to dope and release lithium ions. Masashi further discloses that the positive active material may contain elements B, Sc, Y, or Cu, all of which are group III elements (par. 12, 17). The positive active material inherently is able to come into contact with the electrolyte.

Regarding claim 2, Masashi discloses that the positive active material may be an oxide, which is a chalcogen compound (par. 12).

Regarding claim 3, Masashi discloses that the positive active material may be an oxide (par. 12).

Regarding claim 4, Masashi discloses a chemical of the formula $Li_qCo_{1-a}Z_aO_b$ where according to the ranges describe the reference it is possible that: q=1; a=0; and b=2 (par. 12).

Regarding claim 13, as discussed above, Masashi anticipates both claims 1 and 3; therefore claim 13 is rejected as being solely dependant on said claims without any further limitation.

Regarding claim 14, Masashi discloses a rechargeable lithium-ion battery, which is impregnated with a nonaqeuous electrolyte and features a negative electrode. One of ordinary skill in the art would recognize that a rechargeable lithium-ion battery would inherently posses a negative electrode material that was able to dope and undope lithium ions.

Regarding claim 15, Masashi does not recite that the battery is for use at an upper-limit voltage of 4.3 V or higher. However, because Masashi is made from the same material it would inherently be capable of operation at an upper-limit of 4.3 V.

Regarding claim 16, Masashi discloses that the electrode may contain carbon. However, Masashi does not disclose that the lithium ions of the negative electrode are capable of doping at 1.05-1.50 times that of the positive electrode when the battery is used at its upper limit voltage. However, Masashi has the same material composition that is claimed and therefore would be inherently capable of the doping conditions as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masashi as applied to claims 1-3, 13, and 14 above, and further in view of Okada et al. (US Pat. Pub. 2003/0162090).

Regarding claim 5, Masashi teaches a positive electrode material that may have the formula $Li_qCo_{1-a}Z_aO_b$, where Z may be one or both of the elements Mn, and Ni (par. 12). Masashi does not teach that the crystal structure may be of a α-$NaFeO_2$ type. However, Okada et al. teaches that an electrode may consist of a α-$NaFeO_2$ structure containing Li and at least one of Ni, Co, and Mn (par. 35). One of ordinary skill in the art would have recognized that a α-$NaFeO_2$ structure would have been suitable in the positive electrode material of Masashi. The selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill

in the art. See, *In re Leshin*, 25 USPQ 416 (CCPA 1960); see also, MPEP § 2144.07. Masashi further does not disclose the precise formula for the ratio of the different elements Li, Mn, Co, Ni, and O. However, the formulation of these elements is a result effective variable. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." See, *In re Aller*, 220 F.2d 454, 456 (CCPA 1955). The discovery of an optimum value of a known result effective variable, without producing any new or unexpected results, is within the ambit of a person of ordinary skill in the art. See, *In re Boesch*, 205 USPQ 215 (CCPA 1980); see also, MPEP § 2144.05 (II). Therefore, it would have been obvious for one of ordinary skill in the art to combine the positive electrode material of Masashi with the α-$NaFeO_2$ crystal structure because such a structure would have been suitable for such purposes. Furthermore, the exact formulation of the positive electrode material of Masashi is a result effective variable.

Claim 15 states that the lithium ion battery is "for use at an upper-limit voltage of 4.3 V or higher." This is a statement of intended use, therefore if the prior art structure is capable of performing the intended use, then it meets the claim. See, *In re Casey*, 152 USPQ 235 (CCPA 1967); see also, *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Masashi does not specifically teach that the lithium ion battery may operate at an upper-limit voltage of 4.3 V or higher. However, Okada et al. teaches a lithium ion battery of a α-$NaFeO_2$ structure that has a maximum charging voltage of 4.3 V (par. 81, 93-97). One of ordinary skill in the art would recognize that the combination of the Masashi

battery with the Okada crystalline structure would be capable of performing at an upper limit of 4.3 V or higher.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB MARKS whose telephone number is (571)270-7873. The examiner can normally be reached on Monday through Friday 7:30-5:00 alt Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sines can be reached on 571-272-1263. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/jm/

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795